

NEW SPECIES OF GEOMETRIDÆ FROM TROPICAL AMERICA.

By WILLIAM SCHAUS.

Hypnochlora olvidaria, sp. nov.

Body white. Wings white, covered with transverse striæ of a dull green, thicker in places and forming two transverse shades from the costal margin of the primaries to the inner margin of the secondaries. Expanse, 9 mm.

Habitat: Castro, Parana.

Comostola pallidaria, sp. nov.

Body yellowish white. Wings above white, thickly flecked with light green scales; fringes white, costal margin of the primaries white. A black discal point on primaries and secondaries. Underneath the wings are white. Expanse, 13 mm.

Habitat: Castro, Parana.

Racheospila arpata, sp. nov.

Head reddish. Thorax bright green. Abdomen whitish green, with a sub-dorsal row of reddish tufts. Wings bright green, with a reddish point, in the cells. The primaries with the outer margin purplish, wide at the inner angle, very narrow between 3 and 4, then widening slightly, and not continuing beyond 6, the fringe purplish. Secondaries with a large purplish spot, inwardly shaded with yellow at the apex; the anal angle also purplish and the fringe of the same color. Underneath greenish white, showing the markings of the upper surface. Expanse, 22 mm.

Habitat: Rio Janeiro.

Named after my friend, M. J. Arp, of Rio Janeiro.

Nemora masonaria, sp. nov.

Head brown. Thorax green. Abdomen dorsally brownish, laterally white. Wings white, thick irrorated with dark green striæ and scales; two indistinct very fine, wavy green lines cross both wings. Primaries with a small dark green discal spot. Underneath greenish white, the costal margin of the primaries finely brown. Expanse, 17 mm.

Habitat: Jalapa, Mexico.

I take pleasure in naming this species after J. T. Mason, Esq., who has kindly given me a specimen.

Aplodes fringillata, sp. nov.

Head thorax and abdomen white. Wings above bright green, the outer margins and fringes pearly white. A basal white spot on the primaries. An inner and a sub-marginal white line on both wings, between the latter and the extreme margin the veins are white. A white discal point on each wing. Two white spots on the inner margin of the primaries contiguous to the white lines. Underneath greenish white. Expanse, 15 mm.

Habitat: Castro, Parana.

Tachyphyle janeira, sp. nov.

Palpi white. Head, thorax and abdomen green. Wings above green, a smoky brown space occupying the base of both wings, except the costal margin of the primaries; an outer wavy dark line, heaviest on the primaries and outwardly shaded with luteous, crosses both wings, beyond which the nearly entire outer margin is black except the apex of the primaries and the anal half of the outer margin on the secondaries. A black discal point on each wing. Underneath nearly white, the outer margin of the primaries and the apex of the secondaries heavily shaded with black. A round black spot near the base of the primaries and a transverse basal black mark on the secondaries. Expanse, 31 mm.

Habitat: Rio Janeiro.

Azelina paranaria, sp. nov.

Antennæ pectinated, outer margins angular. Wings above pale reddish gray specked with black, the primaries with the space between the two lines reddish brown especially along the outer line. A round black discal spot on each wing. On the primaries the inner line extends from the costa, forming a deep curve close below the discal spot, and then two other large curves towards the inner margin, but not so deep as the first; the outer line wavy. Secondaries with only the outer line, which is nearly straight and shaded with brownish near the inner margin. Some termina, black points. Underneath the wings are greenish gray, with brown outer line finely wavy on the primaries, dentate on the secondaries, a dark annular discal spot on each wing. Expanse, 34 mm.

Habitat: Castro, Parana.

Nearest *Azelina lindigii* Feld.

Azelina jonesaria, sp. nov.

Wings very slightly dentate. Antennæ simple. Body and wings greyish brown. The primaries having the inner line wavy and oblique from the costa to the median at the origin of vein 2; the line recommences again at the median nearer the base, and forms an angle at the submedian. This line is outwardly shaded with very dark brown. The outer line is parallel with the outer margin, very slightly wavy with a deep indentation on the submedian vein. This line is inwardly shaded with rich brown, outwardly outlined finely with buff which is followed by a broad grayish shade, beyond which the margin is buff with a subterminal brownish shade. A terminal row of spots. The discal spot consisting of two small velvety brown contiguous spots one above the other and sometimes forming a line. Secondaries grayish brown. A submarginal buff line inwardly shaded with darker brown. Underneath dark fawn color, irrorated with black scales. A black discal point on the secondaries. An outer dentate whitish line. Expanse, 31 mm.

The ♀ differs in having the medial costal space of the primaries more light reddish brown, and the general ground color of the wings more of a gray. The terminal spots are yellow. Underneath the outer line is more angular and shaded with dark brown. Expanse, 34 mm.

Habitat: Castro, Parana.

Semiothisa paranaria, sp. nov.

Primaries excavated below apex. Secondaries with angle. Body and wings creamy buff, thinly speckled with brown. On the primaries a basal curved line light olive brown. An inner wavy brown shade on both wings followed on the primaries by another wavy olive brown shade. A minute cluster of brown scales at the origin of vein 2. An olive brown streak at the end of the cell. On the secondaries a black discal point. A broad greenish gray outer shade on both wings, narrowing near the apex on the primaries and cut by a brownish streak. The fringe buff except in the excavation below the apex where it is dark olive brown. Underneath yellowish buff with the markings as above, but the outer shade is more in the appearance of a band interrupted by the veins which are yellow. A whitish patch at the apex of the primaries. Expanse, 26 mm.

Habitat: Castro, Parana.

Semiothisa masonata, sp. nov.

Primaries with apex rounded and then excavated. Secondaries with an angle. Wings lilacine brown, the outer margin somewhat darker; the basal line slightly curved, fine brown. The inner line fine, nearly straight and contiguous on the primaries to a dark brown spot on the costal margin. The outer line first curved, then nearly straight till the secondaries, where it is very wavy, fine, brown, outwardly shaded with buff. Beyond the outer line a brown costal spot on the primaries, also a cluster of brown scales between veins 3 and 4. A black discal point on secondaries. Underneath yellowish, irrorated with brown. The basal and inner lines more heavily marked, the outer line very fine and followed by a more distinct brown line which is nearly straight and is outwardly rather heavily shaded with brown. Expanse, 26 mm.

Habitat: Jalapa, Mexico.

Epione cinerea, sp. nov.

Body and wings silvery brown gray, irrorated with black and white scales. Veins pale, distinct; an outer row of black points on the veins, connected by a fine brownish line, crosses both wings. The primaries with an indistinct white inner line, and a large black discal point, a subapical reddish brown shade. Underneath the markings less distinct, and the anterior portion of the outer line shaded with brown. A black discal point on the secondaries. Expanse, 28 mm.

Habitat: Rio Jalapa.

Acrosemia ochrolaria, sp. nov.

Head and thorax reddish. Abdomen yellowish brown. Wings reddish, both crossed by a wavy brown line, outwardly shaded with gray, which starts from a subapical gray spot on the costa of the primaries. A terminal brownish gray line partly dentate on the primaries, and forming a row of spots on the secondaries. A black discal point on each wing. On the primaries an inner transverse line, slightly curved, brown, inwardly shaded with gray. Underneath the wings are buff, the transverse lines smoky and most apparent on primaries. Expanse, 28 mm.

Habitat: Jalapa, Mexico.

Boarmia cariaria, sp. nov.

Pale grayish fawn color irrorated with dark striæ and specks, a basal curved black line not reaching the costal margin, a subbasal dark shade from the costa to the submedian vein; the median shade outwardly curved below the costa, and marked with a series of black points on each vein; this shade is closely followed by the outer line which is black and also marked with black points on each vein; beyond the outer line an indistinct brownish shade, and a subterminal wavy white line. On the secondaries the median shade and outer line are widely separated. A brownish spot at the end of the cell on both wings. Underneath the wings are yellowish white; on the primaries a terminal black shade widest at the apex, which is itself white; the costal margin of the primaries yellowish with fine black striæ. Expanse, 38 mm.

Habitat: Peru.

Described from a long series showing no variations, the species is closely allied to *B. roccaria* Obt.

Boarmia orizabaria, sp. nov.

Body gray. Wings white, thinly irrorated with black specks; the veins on the outer half of the wings yellow; some yellow shades at the base; the basal line fine, black; the median shade and outer lines black, indistinct on the primaries; on the secondaries the median shade is formed of two parallel bands and more conspicuous, the outer line is fine and well marked; a yellow shade follows the outer line on both wings; the apical portion of the primaries is blackish crossed by a wavy white subterminal line, the apex itself being gray. A broad subterminal black band on the secondaries. A large black spot in the cells. Underneath white; a black spot in each cell; a large black space on the apical portion of the primaries, leaving the apex white. On the secondaries, a few black marks on the outer margin below the apex. Expanse, 37 mm.

Habitat: Orizaba, Mexico.

This species is very distinct from any described form known to me. I possess a ♂ also quite similar but in poor condition.

Boarmia dukinfieldia, sp. nov.

Body gray; a black transverse line on the basal segment of the abdomen. Wings whitish, thickly irrorated with brownish scales, especially beyond the outer line. The basal line velvety black, very conspicuous; the median shade consisting of a fine brownish line rather indistinct except on the inner margin of the secondaries. A dark brown point in the cell; the outer line black, dentate and wavy, followed on the primaries at vein 4 by a dark shade extending towards the outer margin; the outer line followed by two brownish bands; a subterminal whitish wavy line on the primaries, the extreme margin distinctly outlined in black, the fringe white, spotted with black at the end of veins. Underneath the wings are dark gray, especially along the margins, and are crossed by an outer line marked with dark points in the veins. Expanse, 35 mm.

Habitat: Castro, Parana.

Boarmia sapulena, sp. nov.

♂ fawn color, thickly irrorated with brownish scales especially on the outer half of the wings, the basal line fine, blackish, indistinct; the median shade, dark, broad, indistinct, suffused with the ground color, the outer line fine, wavy, black, followed by a light brownish shade; an ill-defined smoky terminal band, divided by a semilunular white line. Abdomen with two dorsal rows of black spots. Underneath wings sordid white, faintly irrorated with brownish scales, and a faint dark subapical shade on the primaries and the discal spots indistinct. Expanse, 31 mm.

♀ Fawn color, thickly irrorated with brownish scales, no lines visible. A broad transverse median shade and the outer line replaced by a series of black points on the veins, followed by a faint brownish shade. The discal spots very indistinct. Expanse, 42 mm.

Habitat: Petropolis, Rio Janeiro, San Paulo.

Boarmia luciaria, sp. nov.

Thorax brown. Abdomen gray. Primaries dark brown with the median space between the basal and outer lines light gray, these two lines black, well defined; a faint median brownish line, the discal spots brownish, circular, with grayish centre; an indistinct subterminal dentate blackish line inwardly powdered with grayish scales. Secondaries with the basal half light gray, crossed by a faint brownish median line, the outer line black, distinct; the marginal half dark brown with an indistinct subterminal grayish shade. A terminal row of black points. Underneath the wings are whitish at the base and then heavily shaded with black. Expanse, 32 mm.

Habitat: St. Lucia, B. W. I.

Boarmia aztecaria, sp. nov.

Head and thorax gray. Abdomen somewhat paler. Wings semi-diaphanous, whitish gray, slightly irrorated with darker gray and blackish striæ. Primaries with the base somewhat brownish; the basal line velvety black, oblique from costa to median, then slightly curved inwardly to the submedian and afterwards very oblique inwardly towards the base of the inner margin; a broad blackish sinuate median line extending on to the secondaries, where it curves down along the inner margin; the outer line velvety black and fine, starting from the costa at four-fifths from the base, obliquely curved to vein 5, where it shoots out a short black line towards the outer margin, and then wavy and sinuate to the middle of the inner margin, just above which it touches the median line; on the secondaries a wavy black outer line. The extreme margin finely black. The discal spots small and faintly marked. Underneath white, showing the markings of the upper side. Expanse, 42 mm.

Habitat: Orizaba and Oaxaca, Mexico.

A very fine and distinct species.

Boarmia franckia, sp. nov.

Wings fawn color irrorated with black scales, thickly so on the basal and median spaces. The basal and outer lines fine, black and parallel, very oblique outwards from the costa, and then angled and inwardly oblique to the inner margin;

the outer line followed on both wings by a brown band: the median shade dark, very dentate on the primaries; the discal spots small, black; on the outer margin some diffuse brown and whitish shades; the extreme margin finely black. Underneath pale fawn color irrorated with grayish scales; an indistinct outer row of points on the veins. Expanse, 39 mm.

Habitat: Castro, Parana.

Boarmia nebularia, sp. nov.

Wings pale fawn color, thickly irrorated with pale brownish scales; the lines very indistinct and represented rather by shades and heavier suffusion of scales; the outer line semilunar on the primaries, straight on the secondaries; a subterminal row of dark spots, more noticeable on the secondaries; a terminal row of black points. Underneath the wings are pale fawn color, thinly irrorated with brownish scales; a black point in the cells and a broad subterminal dark shade. Expanse, 35 mm.

Habitat: Petropolis, S. Brazil.

The sexes are quite similar.

ON THE TWO SPECIES OF EUDÆMONIA.

PLATES XI-XII.

BY WILLIAM BEUTENMULLER.

Several examples of *E. brachyura* and *E. argiphontes* and their larvæ, from Sierra Leone, Africa, are in the collection of Old World Heterocera of William Schaus, Esq., which was recently donated by him to the American Museum of Natural History.

Eudæmonia brachyura (Plate XI) is pink, with the spots yellowish. The larva is deep black on the upper side with the extreme sides broken with yellowish, and the under side wholly yellowish (possibly green in life). Anal plate with the two thorny spines, cervical shield and head testaceous. Along each side of the body are three rows of spines with branches of shorter spinules, on the anterior edge of the cervical shield are four short spines. Length 33 mm. August 21, 1895. *E. argiphontes* (Plate XII) is brown with pinkish shades and a dark transverse band across each wing. The larva is yellowish (probably green in life), mottled with black along the sides, cervical shield, lateral row of spines and those on 1, 2, 3, 11 and 12 segments black. Remaining rows of spines yellow (green) tipped with black, with the spinules also tipped with black. On each side of the segments 3 and 4 is a black band broken on the dorsum by the ground color. Thoracic feet brown. Length 37 mm., July.